

# FOREST PEST CONDITIONS *in the* NORTHEAST '74



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# FOREST PEST CONDITIONS IN THE NORTHEAST 1974

BY

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# FOREST PEST CONDITION IN THE NORTHEAST 1974

## CONDITIONS IN BRIEF—1974

The gypsy moth continued its spread through Pennsylvania and threatens to become established in Lower Michigan. In 1974, 750,905 acres were defoliated, of which 190,000 acres were aerially sprayed in the cooperative State-Federal program. In addition to the cooperative gypsy moth suppression program, two new formulations of *Bacillus Thuringiensis* and reduced rates of carbaryl and trichlorfon were tested by the U.S. Forest Service. Wisconsin and West Virginia are releasing parasites before the gypsy moth reaches their states in an effort to establish parasite populations in other naturally occurring insect populations. The spruce budworm has infested 124 million acres in northeastern North America. In Maine, which had over 5,000,000 acres defoliated, about 430,000 acres were treated with Zectran.<sup>®1</sup> Egg mass and damage surveys indicate an increase in budworm population, and an area of 3,500,000 acres may need treatment in 1975. The outbreak in Minnesota is subsiding, while those in Wisconsin and Michigan are increasing. The oak leaf roller continued to spread and cause heavy defoliation in parts of Pennsylvania. The state is proposing a control project against this insect in 1975. The cherry scallop shell moth has continued to defoliate black cherry in Pennsylvania. A pilot test was conducted by the USFS on the Allegheny National Forest using Sevin 4 Oil.<sup>®</sup> Damaging populations of hemlock looper were present in Pennsylvania. The state sprayed a total of 13,400 acres with carbaryl, trichlorfon, and Orthene.<sup>®</sup> in an effort to control this defoliation.

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Larch sawflies were present in moderate to heavy populations in New York and New Jersey. Malathion was used in Vermont to protect grafted larch plantings.

Dutch elm disease continued to spread through timber stands in Wisconsin and Minnesota and increased in intensity in New York. Oak wilt appears to be static in all states. Beech bark disease caused mortality in beech stands in Pennsylvania, New York, New Hampshire, and Maine and moved westward in both New York and Pennsylvania. Lophodermium needlecast was prevalent in many Scotch pine plantations. Many of the plantations in the Lake States and New York and New England were treated with maneb or Daconil®. Red pine shoot blight was reported in new areas of Minnesota and Wisconsin. Scleroderris canker appeared to be static in the Lake States. Anthracnose was present in nearly all states of the northeastern area, but caused little damage in forest stands. White pine blister rust is still a mortality factor in some white pine areas. A limited amount of control work is still being done by states with large quantities of white pine. Hypoxylon canker continues to kill aspen in the Lake States. Ash dieback increased in parts of New York. Air pollution continued to be a problem in West Virginia and Pennsylvania. Spring frosts caused extensive freezing injury in a portion of Illinois.



*TREE COMPLETELY DEFOLIATED BY GYPSY  
MOTH LARVAE*

# STATUS OF INSECTS

## HARDWOOD DEFOLIATORS

**GYPSY MOTH**, *Porthetria dispar* (Linnaeus)—Pennsylvania was again the primary site of gypsy moth activity. Populations increased in the areas of eastern Centre County and portions of southeastern Pennsylvania. However, there was a dramatic collapse in the population over most of the Pocono Plateau. Moderate to heavy defoliation occurred on 479,590 acres which is substantially less than the 856,710 acres defoliated in 1973.

A significant reduction occurred in the gypsy moth population in New England, New York, and New Jersey. Acreage defoliated by the gypsy moth decreased from 920,000 to 370,000 acres. Massachusetts and Maine were the only states that had a significant increase in defoliation—acres defoliated nearly doubled in these two states. Overall, the gypsy moth defoliated 750,905 acres in the northeast in 1974, which was a 42% reduction from 1973.

In 1974, the states surrounding and adjacent to Pennsylvania continued to monitor the influx of gypsy moth by using the disparlure-baited (sex attractant) traps. New male moth catches were recorded in the following counties and states: Green County, Missouri; Fayette and Morgan Counties, West Virginia; and Geauga County, Ohio.

Approximately 190,000 acres were treated in the cooperative State-Federal Program. Three registered insecticides—carbaryl, trichlorfon, and *Bacillus thuringiensis*, a biological insecticide, were used successfully. Disparlure in combination with carbaryl was applied over 750 acres in Pennsylvania under a cooperative agreement with Pennsylvania State University.

A pilot control project with two new *Bacillus thuringiensis* formulations in Pennsylvania showed good foliage protection was achieved with two applications; final defoliation in sprayed plots averaged 57% while unsprayed plots averaged 93%. Reduced application rates of carbaryl and trichlorfon in Rhode Island showed that one-half pound per acre (one-half registered rate) produced the same larval mortality as one-pound per acre. This may reduce environmental impact and cost of future operational suppression programs.

Pennsylvania and West Virginia continue to rear and release gypsy moth parasites. Of the 603,703 parasites released by Pennsylvania, *Apanteles liparidis* Bouche comprised 38% of the total. West Virginia released 35,350 *Brachymeria intermedia* (Nees) out of a total of 44,750 parasites released. *A. liparidis* Bouche, *Coccygominmus turionelle* (Linnaeus), *Meteorus pulchricornis* (Wesmael), and *Palexorista* spp. were released in New York to increase the number of natural control agents in gypsy moth populations. New Jersey Department of Agriculture, in cooperation with APHIS, are rearing eleven new or exotic species of parasites. These are or will be available to other states for their biological control programs. Maryland, which already has a gypsy moth infestation, and Wisconsin, which is located outside the gypsy moth infestation, also reported release of parasites.

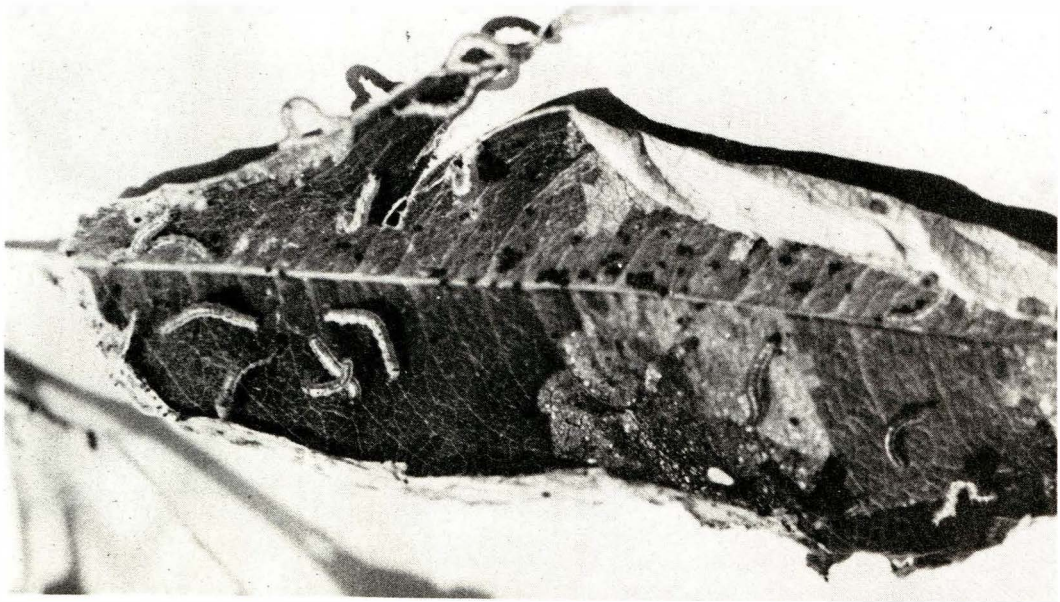
In general, the gypsy moth infestation is expected to spread to the south and west of the currently infested area in Pennsylvania. Proposed treatments in cooperative State/Federal suppression projects for 1975 are listed in Table 1.

Table 1. Proposed Treatment for Gypsy Moth in 1975.

| State        | Acreage | Insecticide   |
|--------------|---------|---------------|
| New Jersey   | 15,000  | Sevin 4 Oil   |
| New York     | 7,000   | Sevin 4 Oil   |
|              | 1,000   | <i>B. t.</i>  |
| Pennsylvania | 26,920  | Dylox 1.5 Oil |
| Rhode Island | 5,000   | Sevin 80S     |
| TOTAL        | 54,920  |               |

**An OAK LEAF ROLLER**, *Archips semifervans* (Walker)—Pennsylvania has been plagued by this insect since 1967. In the years from 1967-1973, the oak leaf roller defoliated 3.5 million acres of forest land. Mortality figures from 1967-1972 were a loss of 2,438 million board feet on 900,000 acres sampled. This year, 140,000 acres were heavily defoliated with 90,000 acres of light to moderate defoliation. The state is proposing a control project against this insect in 1975. The Allegheny National Forest reported that 63,000 acres of light to heavy defoliation by the oak roller, and four counties in Lower Michigan received defoliation by this insect.

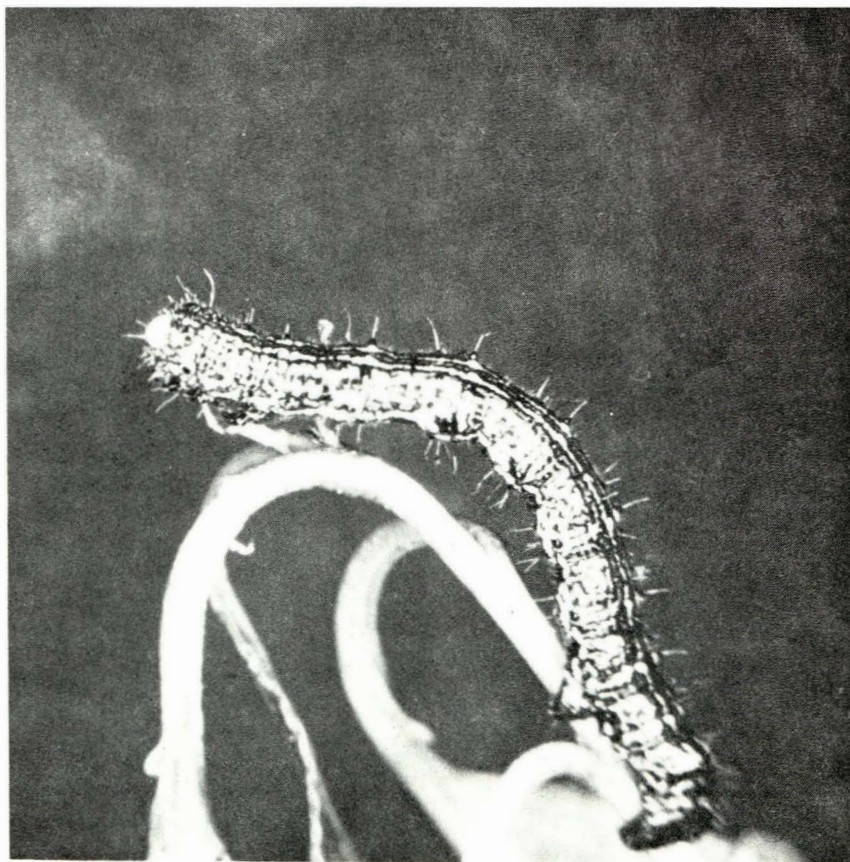
**CHERRY SCALLOP SHELL MOTH**, *Hydria prunivorata* (Ferguson)—This insect continues to defoliate black cherry throughout northwestern Pennsylvania. In 1974, the state reported 16,000 acres of heavy defoliation and 186,000 acres of light to moderate defoliation. The Allegheny National Forest received severe defoliation for the fourth consecutive year. A pilot control study using Sevin-Oil against the cherry scallop shell moth was conducted by the USFS on the Allegheny National Forest. Results of the test are not conclusive at present. In western Michigan, feeding by the cherry scallop shell moth appears to be the cause for choke cherry and wild cherry mortality.



CHERRY SCALLOP SHELL MOTH LARVAE FEEDING  
ON BLACK CHERRY

**FALL AND SPRING CANKERWORMS,** *Alsophila pometaria* (Harris) and *Paleacrita vernata* (Peck)—Population levels were as high in 1974 as in 1973 in Rhode Island. New York reported that fall and spring cankerworm larvae contributed to the defoliation in infested gypsy moth areas. Increased defoliation occurred in three counties in New Jersey. Approximately 4,000 acres were sprayed with Sevin 4 Oil to control an outbreak of these insects in Massachusetts.

Pennsylvania reported the fall cankerworm caused 3,000 acres of heavy defoliation and 4,100 acres of moderate defoliation in 1974. West Virginia received 3,200 acres of heavy defoliation in Jefferson and Grant Counties. *P. vernata* and *A. pometaria* caused defoliation on the south side of Minneapolis, Minnesota. A 40-block area was treated with *Bacillus thuringiensis* by helicopter. One application of *B. t.* appeared to be effective.



FALL CANKERWORM

**EASTERN TENT CATERPILLAR**, *Malacosoma americanum* (Fabricius)—The eastern tent caterpillar caused heavy defoliation in many areas of New York. Light to moderate defoliation was reported on wild cherry and other forest and shade trees in New Hampshire.

**RED HUMPED OAKWORM**, *Symmerista canicosta* (Franclemont), and **ORANGEHUMPED MAPLEWORM**, *Symmerista leucitys* Franclemont—Noticeable feeding by these two defoliators was observed on sugar maple, oak and many other shade trees in Maine, Vermont, New Hampshire, and New York. Orange-humped mapleworm infestations were found on sugar bushes at St. Regis Falls and Tug Hill, New York. The redhumped oakworm is collapsing throughout the Northeast. Low population levels of the oakworm were reported in Connecticut, Iowa, Michigan, and Rhode Island.

**ASPEN BLOTCHMINER**, *Lithocolletis tremuloidiella* (Braun)—This insect along with unidentified miners caused moderate to severe defoliation on approximately 25,000 acres of aspen and balsam poplar in the town of Peru, Clinton County, New York. Moderate defoliation also occurred in other areas of Clinton and Essex Counties, New York.

**BIRCH LEAFMINER**, *Fenusa pusilla* (Lepeletier)—Moderate to severe browning of birch was caused by these miners in New Hampshire, Maine, and Vermont. Defoliation was statewide in Vermont with the second generation causing more damage than the first generation. These insects also caused birch defoliation in central and northern Wisconsin.

**OAK SKELETONIZER**, *Bucculatrix ainliella* (Murtfeldt)—This insect caused light defoliation on 100,000 acres in Tioga County, Pennsylvania.

**ELM LEAF BEETLE**, *Pyrrhalta luteola* (Muller)—Missouri reported light defoliation by this insect for 1974, but the trend for 1975 is predicted to be moderate to heavy defoliation throughout the state. Pennsylvania and West Virginia reported moderate to heavy defoliation scattered throughout the southern sections of their states. Elm leaf beetles were common in southern Michigan and caused browning of elms, especially Chinese elms.

**LARGE ASPEN TORTRIX**, *Choristoneura conflictana* (Walker)—Most of the outbreaks of the large aspen tortrix have subsided. Only Wisconsin reported scattered light defoliation.

**LOCUST LEAFMINER**, *Xenochalepus dorsalis* (Thunberg)—The locust leafminer caused heavy defoliation in the southern sections of Ohio and Indiana. Ohio reported the highest population level in the past five years.

**WHITEMARKED TUSSOCK MOTH**, *Hemerocampa leucostigma* (J. E. Smith)—This insect caused light to heavy defoliation in several Indiana Counties.

**SATIN MOTH**, *Stilpnotia salicis* (Linnaeus)—Larval populations of the satin moth are building up in areas defoliated in 1969 and 1970 in Maine.

## HARDWOOD INSECTS—OTHER

The elm lace bug, *Corythucha ulmi* Osborn & Drake, caused browning of elm on about 5,000 acres in central Wisconsin. Tree damage caused by the sugar maple borer, *Glycobius speciosus* (Say), is still of major concern in discoloration and grade loss of sugar maple lumber production in Vermont. An aerial survey on the White Mountain National Forest in 1974 showed that a 90 acre beech stand was severely infested with oystershell scale, *Lepidosaphes ulmi* (Linnaeus). Salvage work is now being conducted in this area. The periodical cicada, *Magicicada septendecim* (Linnaeus), caused severe oviposition damage to oak and many other trees in Plymouth and Cape Cod, Massachusetts. Approximately 30% of the terminal portions of many trees were damaged.

## CONIFER DEFOLIATORS

**SPRUCE BUDWORM**, *Choristoneura fumiferana* (Clemens)—The total acreage defoliated by the spruce budworm in northeastern North America is estimated at 124 million acres. This is probably a record for acreage defoliated by this insect. Large flights of moths and heavy egg mass deposition were reported in Maine, New Hampshire, Vermont, and New York.

The acreage defoliated by spruce budworm in northern Maine now covers in excess of 5,000,000 acres, involving the fir-spruce type in five counties: Aroostook, Penobscot, Piscataquis, Somerset, and Washington. The infested area was twice that of the previous year.

In June, a cooperative state-private-federal suppression project was conducted on 430,000 acres of infested timber in Maine. Zectran was applied aerially against the spruce budworm at a rate of 0.15 lb. per acre. Results indicated a 95% reduction in the budworm population in the treated areas. Because of the tremendous increase in the size of the infested area and the intensity of feeding, an area of 3.5 million acres may need treatment in 1975.

In the Lake States, the spruce budworm outbreak in northeastern Minnesota is declining, but outbreaks are increasing in northern Wisconsin and Michigan. Tree mortality was reported from all three Lake States. The state of Minnesota in cooperation with the U.S. Forest Service treated 3,500 acres with Zectran at the rate of 0.15 lbs. per acre. The larval population was reduced about 90% in treated areas.

In mid-July, a storm originating in southern Canada brought with it moths of the spruce and jack pine budworm. Ohio and Indiana reported large numbers of moths in the northern areas of the states. Western Pennsylvania reported 13,000 acres of heavy hemlock defoliation by the spruce budworm in Cameron, Elk and Clearfield Counties.

SPRUCE BUDWORM



**JACK PINE BUDWORM**, *Christoneura pinus* (Freeman)—The jack pine budworm has defoliated 500,000 acres in the northern half of Lower Michigan. Tree mortality of over 50% is reported on about 20,000 acres in the vicinity of Oscoda. Dying trees will be harvested in the near future. Some defoliation is expected to continue in 1974. A jack pine budworm buildup is also reported from northwestern Wisconsin. About 12,000 acres were defoliated this year and 50,000 acres of defoliation is predicted for 1975.

**HEMLOCK LOOPER**, *Lambdina fiscellaria* (Guenée)—Pennsylvania treated a total of 13,440 acres in five western counties to control this defoliator. Acreages and insecticides used are as follows: 12,800 acres with Sevin 4 Oil; 440 acres with Dylox 1.5 Oil® and 200 acres with Orthene. In the past five years, severe defoliation has occurred on 12,000 acres resulting in the death of 500,000 trees. Ohio reported scattered light to heavy defoliation by this insect in eastern river counties.

**LARCH SAWFLY**, *Pristiphora erichsonii* (Hartig)—Moderate to heavy infestations of larch sawfly were reported in New York and New Jersey. Nearly all larch stands in northern New Jersey sustained 30-60% defoliation. Population levels were generally lower in Vermont and New Hampshire. Grafted larch plantings in Vermont were sprayed with malathion to minimize tree damage. A survey conducted on Hector Land Use Area, New York, indicates that the defoliation was light to moderate on Japanese larch. Larch defoliation in the Lake States was sporadic. In Minnesota, two parasites, *Olesicampe benefactor* and *Mesoleius tenthredinis*, were introduced a few years ago and appear to be established.

**PINE LOOPER**, *Lambdina athasaria pellucidaria* (Grote and Robinson)—Larval populations continue to cause light to moderate defoliation on pitch pine in Cape Cod, Massachusetts, but population levels were considerably lower in 1974. Aerial spray operations conducted in 1973 and natural controls probably contributed to population decline. Population trends indicate that this insect will become endemic or collapse in 1975.

**WHITE PINE CONE BEETLE**, *Conophthorus coniperda* (Schwarz)—This beetle has affected eastern white pine seed production in Ohio for several years. Populations are high in Maumie, Mohican, and Zaleski State Forests. Seed yield for 1974 is at the lowest level and the state is planning an insecticide pilot control study for next year.

**RED PINE SCALE**, *Matsucoccus resinosae* (Bean and Godwin)—The red pine scale caused heavy mortality of red and Japanese black pine in Suffolk, Nassau, Putnam, and Westchester Counties, New York. The infestation has not reached the natural red pine stands, but it is spreading rapidly. Seventeen new scale infestations, totaling 23 acres, were detected in portions of Bergen and Passaic Counties, New Jersey. Fourteen of the 17 acres infested on Wanaque Reservoir, New Jersey, were harvested for pulpwood.

**EUROPEAN PINE SAWFLY**, *Neodiprion sertifer* (Geoffroy)—Larvae were commonly found on Scotch and Austrian pines in two counties in New Jersey. In New York, population levels state-wide continue slowly downward for the second consecutive year since the peak.

**ARBORVITAE LEAFMINER**, *Argyresthia thuiella* (Packard)—Arborvitae leafminer caused severe browning of arborvitae foliage in two counties in New Hampshire. In Vermont, arborvitae mortality caused by defoliation of this insect is continuing. The heaviest populations are located in the northern portions of the state where they appear to be increasing. Vermont plans no control measures for this insect. In Lower Michigan, this insect caused browning over large lowland areas. Defoliation is estimated at 50 to 75% in the area.

**PINE TUSSOCK MOTH**, *Dasychira plagiata* (Walker)—This insect appears to be building up in northern Wisconsin, but no defoliation was reported this year.

## CONIFER INSECTS—OTHER

**BALSAM WOOLLY APHID**, *Adelges piceae* (Ratzeberg)—Aerial surveys indicate that balsam woolly aphid damage increased in Vermont in 1974 with approximately 20,000 acres showing fir mortality. No recent mortality of fir was reported in New Hampshire. Approximately 3 to 5 acres of fir is severely infested by this insect on the Green Mountain National Forest.

## STATUS OF DISEASES

**DUTCH ELM DISEASE**, *Ceratocystis ulmi* (Buism.) C. Mor.—The disease caused heavy damage and mortality to elms in several Indiana Counties. In Missouri, it continues to be responsible for the death of many elm. Dutch elm disease is at a very high level in New York. It is suspected that one reason for the build up in Massachusetts is a loss of community interest because of increased control costs and discouraging results from control efforts. Dying elms are becoming a common scene in northern Wisconsin and eastern Minnesota, in addition to the ravaged southern parts of the Lake States. Wisconsin reports millions of board feet of high quality elm lost to the disease. Most regions are directing hardwood cutting into elm areas infected with Dutch elm disease.

**OAK WILT**, *Ceratocystis fagacearum* (Bretz) Hunt—Oak wilt was responsible for moderate damage in the northwestern part of Indiana and light damage over the remainder of the state. In Missouri, oak wilt occurred in the Salem area and in Randolph County on the Rudolph Bennett Wildlife Area. An oak wilt survey in West Virginia processed 2,081 trees this year, which is about 25% fewer trees than in 1973. Dying oaks are a common scene around the Minneapolis-St. Paul area in Minnesota and in central Wisconsin. Michigan reports less incidence of the disease this year, but new discoveries were made in the western part of Lower Peninsula of Michigan where it had not been previously reported.

**RED PINE SHOOT BLIGHT**, *Sirococcus strobilinus* (Pruess)—New areas are being reported in northern Minnesota and Wisconsin where red pine regeneration under older red pines is being killed by the shoot blight. Because of the disease artificial reforestation may be necessary in order to insure future stocking of red pine in some locations.

**SCLERODERRIS CANKER**, *Scleroderris lagerbergii* (Gremmen)—The disease is present in all Lake States, but appears to be endemic. Lower Michigan reports a new find about 30 miles south of the previously known infection center. Four new infection centers were found in a red pine plantation in the town of Diana, Lewis County, New York.

**ANTHRACNOSE**, species of *Gnomonia*, *Gloeosporium*, *Marssonina*, and others—Anthracnose was not as severe in most areas as in 1973. Throughout the state of Indiana, sycamore was heavily defoliated and twig dieback occurred during the spring and early summer. Maple, oak, and black walnut were also infected but not as severely as sycamore. Missouri reported light to moderate damage by anthracnose. Sycamores were heavily defoliated in Maryland with some dieback occurring following defoliation. Sycamore anthracnose was less severe in New England, New York, and New Jersey in 1974 than 1973, while oak and maple anthracnoses were more severe. In southern Wisconsin, oak anthracnose was heavy on white and burr oaks.



ANTHRACNOSE ON SYCAMORE



*ANTHRACNOSE ON BLACK WALNUT*



*CANKER OF WHITE PINE CAUSED BY  
VERTICICLADIELLA PROCERA*

**LOPHODERMMIUM NEEDLECAST**, *Lophodermium pinastri* (Schrad. ex Hook) Chev.—Lophodermium needlecast continues to plague owners of Scotch pine Christmas tree plantations in the northeast. Another infected plantation was found in New York. Pennsylvania reported severe Lophodermium needlecast on a 15-acre plantation. Lophodermium needlecast was lighter this year in West Virginia where dry weather during the infection period may have been the largest contributing factor. In Indiana, Scotch pine Christmas tree plantations across the state suffered heavy damage from Lophodermium needlecast. Many of the Scotch pine Christmas tree plantations in the Lake States were treated with maneb and Daconil. Some areas required two applications. Good control has been achieved with proper timing and thorough coverage.

**WHITE PINE BLISTER RUST**, *Cronartium ribicola* (Fisch.)—White pine blister rust infections are present at a rather low rate in Vermont and Maine as they have been for several years. In New York, Ribes were eradicated on 6,025 acres. In West Virginia, survey evaluation work and a limited amount of Ribes eradication continued on the White Pine Blister Rust Project. Low to moderate infection continues in the northern portions of Minnesota, Wisconsin, and Michigan.



PERITHECIA OF *NECTRIA COCCINEA* VAR. *FAGINATA*, ONE OF CAUSAL AGENTS OF THE BEECH BARK DISEASE

## BEECH BARK DISEASE

—Beech bark disease is caused by a combination of a scale insect, *Cryptococcus fagi* (Baer.) Dougl. and a fungus, *Nectria coccinea* var. *faginata* Loh., Wats. & Ay. The complex of insect and fungus is well established in eight counties of northern Pennsylvania where mortality has been reported in two areas and is expected to increase.

The two beech scales, *C. fagi* and *Xylococcus betulae* (Perg.) Morrison, have been observed in advance of the *Nectria* component in three additional counties. Beech scale is now prevalent in most beech stands in New York. The infestation is moving westward with more mortality occurring in older, infected beech stands. The killing front is east of the Hudson River, but is moving steadily westward. Vermont reports that approximately one million acres of forest land containing beech is affected by this disease. Infested and dying beech stands are prevalent in New Hampshire and Maine. Probably the most important factor in checking the development and spread of the infestation is winter temperatures of  $-35^{\circ}$  F. or lower which cause high mortality of the scale.

**DIPLODIA TIP BLIGHT**, *Diplodia spp.*—This disease has affected Austrian pine throughout Pennsylvania. Mortality has been observed on soil eight inches or less in depth to a clay subsoil. Apparently shallow soil depth and seasonal high water levels are predisposing factors for dieback and mortality. New York reported Diplodia tip blight at a high level and increasing in severity.

**ASPEN SHOOT BLIGHT AND LEAF SPOT**, *Venturia spp.*  
—Shoot blight and leaf spot was prevalent in young aspen in the Lake States. This disease may be responsible for a large portion of crooks, sweeps, forks, and the heavy staining in the heartwood in mature aspen.

**ASH LEAF RUST**, *Puccinia sparganoides* (Ell. & Barth)—Ash leaf rust was severe along with northeastern coast the last three years. It was less severe last year, but left dieback and top kill in its wake.

**WHITE PINE ROOT DECLINE**, *Verticicladiella procera* (Kend.)—This disease is causing severe losses in several West Virginia Christmas tree plantations. White pine root decline is very common throughout Ohio, killing eastern white pine on public and private land.

**ASH DIEBACK**—Ash dieback is reported on the increase throughout the Finger Lakes Region and Hudson River Valley in New York, following several years of static infection.

**ARMILLARIA ROOT ROT**, *Armillaria mellea* (Vahl ex Fr.)—Armillaria root rot has caused pine mortality in scattered locations throughout the Lake States. Mortality is heaviest in plantations released from hardwood overstory. In Vermont, this disease is consistently found associated with spruce stands of low vigor.

**ANNOSUS ROOT ROT**, *Fomes annosus* (Fr.) Cke.—*Fomes annosus* activity is at a low or static level throughout the northeast. New infection centers were found at Alder Creek and Watson in mid-New York. Borax treatments at Providence, Rhode Island, are estimated to be 80% effective. Annosus root rot is present in most of pine plantations on State Forest lands in Ohio.

**BROWN SPOT NEEDLECAST**, *Scirrhia acicola* (Dearn.) Siggers—Brown spot appears to be on the increase in west central part of Wisconsin. This disease also caused damage to Christmas tree plantations in Indiana.

**HYPOXYLON CANKER**, *Hypoxylon mammatum* (Wahl) Milt.—This canker causes mortality of millions of aspen trees annually in the Lake States. Unfortunately, no prevention or control methods are known.

**PINE NEEDLE RUST**, *Coleosporium* spp.—Pine needle rust caused light damage to pines in eight counties in Indiana. In Pennsylvania, it has been reported on 10% of trees in a 3-acre plantation of red pine.

**BLACK CHERRY GUMMOSIS**, cause unknown—In Pennsylvania, slightly higher levels of gummosis were observed on black cherry in Cambria and Indiana Counties than in 1973.

**CANKER OF RUSSIAN AND AUTUMN OLIVES**, cause unknown—The seed stock at the Painted Post Nursery in New York are in a state of decline and some mortality has resulted from this disease. The infected nursery stock may be a hazard to Russian olive and autumn olive used for wildlife and ornamental purposes.

**AIR POLLUTION**—Tip burn and chlorosis, thought to be caused by ozone, were observed on the white pines in the area extending from Clearfield County to Bradford County, Pennsylvania. An examination of white pine in this area revealed less air pollution damage than last year. An air pollution problem in the eastern part of West Virginia appears to be part of a general syndrome in the Allegheny Mountain Range. Trees in plots established in 1971 continued to decline.

**WEATHER DAMAGE**—Late spring frosts were responsible for the production of circular to oval shaped holes in the leaves of oak species throughout the state of Pennsylvania. These holes were caused by frost damage to leaves in bud stage or early budbreak. Spring frosts caused varying amounts of damage in scattered locations in West Virginia. Extensive freezing injury occurred in the southern half of Illinois in the spring of 1974. Particularly hard hit were hemlock, Russian olive, several species of ash, juniper, pine and yew. Ice damage on jack-pine covered about 30,000 acres in central Wisconsin. About 100,000 cords will be salvaged. A large volume of pine timber was blown down in southern Maine, west of Lewistown, during a freak storm on July 4. Leaf scorch of hardwoods along highways was reported from southern Michigan. Dry and hot weather appears to be the cause.

**SALT DAMAGE**—The general decline of susceptible tree species such as hemlock, red maple, sugar maple and yellow birch in and around heavily used state park road areas in West Virginia may be due to the heavy applications of salt used for de-icing the roads. Salt damage was also evident in ornamental trees in Pennsylvania.



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